Bauknecht

Service Manual

Washing machine
Frontloader
WA 1400 Dolphin-D

Model WA 1400 Dolphin-D
Version 8583 293 03000

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Family	OMEGA

This documentation is only intended for qualified technicians who are aware of the respective safety regulations.

Date: 18.07.2001
Document-No.: 4812 712 15008

Subject to modification

Technical data

Dimensions

Height	85	cm
Width	59.5	cm
Depth	60	cm

Weight

With noise protection	80	kg
Without noise protection	79	kg

Main connection

Voltage	230	V
Frequency	50	Hz
Power consumption	2.3	kW
Fuse rating	10	A

Drum

Volume	48	l
Wash spin	40/54	rpm
Ramp spin	90	rpm
Speed spinning max.	1400	rpm

Capacity of dry laundry

Cotton/ coloured laundry	5	kg
Cotton rapid	3	kg
Easy care	2.5	kg
Easy care rapid	1.5	kg
Delicate	1.5	kg
Wool	1	kg

Pressostat for washing-machine

Level1		
Switching point	50 ± 5	mmWc
Reset	25 ± 5	mmWc
Overflow		
Switching point	280± 20	mmWc

Water column drum

Level1		
Switching point	31 - 42	mm
Overflow		
Switching point	267 - 306	mm

Nominal current

Contacts:		
11 - 12	10	mA
11 - 14	10	mA
11 - 16	10	mA

Contactsystem:	
11-12-14	jump contacts
11 - 16	slow action contacts

Door lock

Lock time(20˚C)	3“ - 6“	
Unlock time	60“ - 90“	
Nominal voltage	230	V
Nominal current:		
contact:		
4 - 5	1	mA
11 - 14	10	mA

Heating element

Kind of heating	Tubular heating element with NTC- Sensor	
Nominal voltage	230	V
Nominal power	2050	W
Heat conductor resistance	22 - 28	Ω
Resistance NTC:		
0˚C	35.9	kΩ
30˚C	9.7	kΩ
40˚C	6.6	kΩ
50˚C	4.6	kΩ
60˚C	3.2	kΩ
70˚C	2.3	kΩ
95˚C	1.1	kΩ

Inlet valve

Water temperature max.	60	˚C
Rated flow > 1 bar	8	l/min
Pressure range	0.5 - 10	bar
Nominal voltage	220 / 240	V
Frequency	50	Hz
Starting voltage < 6 bar	160	V
6-10 bar	170	V
Nominal current	35	mA
Nominal power	6	VA
Nominal resistor(20˚C)	3.4 - 4.5	kΩ

Floater

Nominal current	230	V
Nominal power	10	mA
Switch energy	< 15	cN

Technical data

Drain pump (synchronus)

Nominal voltage	230	V
Nominal current	0.3	A
Nominal consumption	34	W
Frequency	50	Hz
Resistor (coil)	155 ± 7%	Ω
Motor protection	no	
Capacity (1.25m height)	15	l/min

Flowmeter

Nominal voltage	5	V
Nominal current:		
nominal	1	mA
maximal	20	mA
Pressure area	0.5 - 10	bar
Line to be recognized	195 - 215	pulse/l
Frequency signal	3.25 - 36	Hz

Distribution actuator

Motor:		
Nominal voltage	230 +10%, -15%	V
Nominal current	13	mA
Nominal resistance(20˚C)	6.5± 10%	kΩ
Contacts:		
Nominal current	1	mA
Nominal voltage	24	V

Electronic complete

Basic	4619 710 43821	
or	4619 710 63221	
Programmed	4619 710 45561	
Type	BK1 1400	
Nominal voltage	230	V
Frequency	50	Hz
Detergent Dispenser	3 Chambers	
Speed	1400	rpm
Cold fill	yes	
Flowmeter	yes	
Ambient temperature	up to 70	˚C
Storage temperature	up to 85	˚C

Output

Aquastop (activated)	AQ2.2 - (Vcc)	24 V
Pump (on)	DP2.1 - DP2.2	230 V
doorlock (on)	DL3.1 - DL3.3	230 V
Heating (on)	HE2.1 - HE2.2	230 V
Motor distributor(on)	DI6.1- DI6.3	230 V
pressostat	PR6.4 - (Vcc)	24 V
- empty	PR6.6 - (Vcc)	24 V
- full(N1)	PR6.5 - (Vcc)	24 V
valve(on)	V2.1 - V2.2	>170 V

Testpoint at electronic

Measuring	Volt DC
Polarisation:	
–	COM
+	Testpoint (look table)

Testpoint	Programselector-switch = Off	Programselector-switch = ON
- 5 V DC	0 V	- 5 V
- 8 V DC	- 8...10 V	- 8...10 V
- 24 V DC	- 22...27 V	- 22...27 V

Technical data

Motor

Type	MCA 61/64 - 148 t.f / BkD0
	i = 1 : 12.36

Resistance contacts:		
1 - 2	68.7	± 7% Ω
Collector directly	1.65	± 7% Ω
5 - 6	1.60	± 7% Ω
5 - 7	0.69	± 7% Ω

Radio interference supression

Nominal voltage	230	V
Nominal capacity	1µ FX1+ 2 x 22nFY	
Nominal inductance	2 x 1	mH
Nominal resistance	470	kΩ

Display module

Type	BK1
Fac. code to 99/35	4619 710 43831
from 99/36	4619 710 43832
Programs	18

Remaining time indication	
Switch start	SST
Start delay	STD
Switch rapid	SR
Switch eco	SEC
Switch pre wash	SPW
Switch rinse intensive	SRI
Switch rinse stop	SRS
Switch spin speed reduction	SSR

Spare part list

Model **WA 1400 Dolphin-D**
Service No. **858329303000**
Version **858329303000**

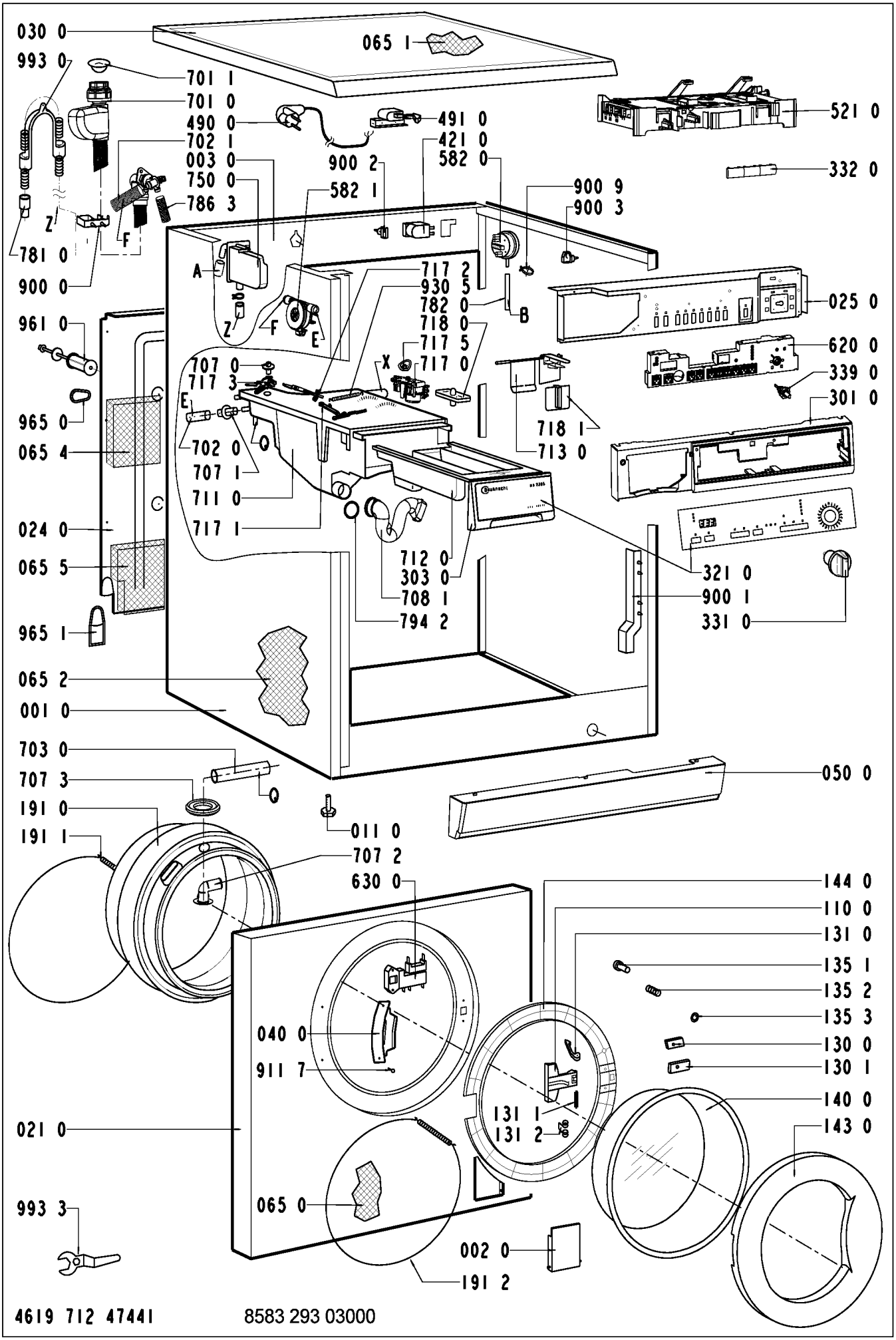
Pos. No.	12NC Code	Description
001 0	**4812 440 18996**	Cabinet
002 0	**4812 440 19331**	Flap Filter
003 0	**4812 464 48112**	Traverse BK-cold
004 0	**4812 440 19583**	Drip tray assy WH,BK-STEP1
011 0	**4812 500 18068**	Foot variable
021 0	**4812 440 19329**	Front
024 0	**4812 440 18998**	Panel, rear
025 0	**4812 440 18994**	Holder WA-DE-IG-BK
030 0	**4812 310 38181**	Table top
040 0	**4812 417 18787**	Hinge
050 0	**4812 459 38021**	Plinth OMEGA
061 1	**4812 466 88464**	Counter weight SS-TUB,1400
065 0	**4812 310 18339**	Insulation Front Pane
065 1	**4812 310 18236**	Insulation
065 2	**4812 310 18399**	Insulation
065 4	**4812 310 18335**	Insulation Middle Pane
065 5	**4812 310 18336**	Insulation Lower
081 0	**4812 466 48057**	Shock absorber
081 1	**4812 502 18424**	Screw damper
084 0	**4812 466 58001**	Silent bloc
084 1	**4812 404 68021**	Holder
086 0	**4812 401 18409**	Holder Shock Absorber
086 2	**4812 401 18412**	Stopper
110 0	**4812 498 18139**	Handle,door white
130 0	**4812 417 28047**	Plate Door lock
130 1	**4812 417 28048**	Plate Doorlock Lower
131 0	**4812 417 28046**	Lock Door
131 1	**4812 417 28045**	Pin Door Lock
131 2	**4812 492 58022**	Spring Door Lock
135 1	**4812 498 18137**	Knob Door safety
135 2	**4812 492 58023**	Spring Door Safety
135 3	**4812 290 68153**	Holder,adjust. Door Safety
140 0	**4812 450 68218**	Door glass
143 0	**4812 440 18988**	Glassdoor frame white
144 0	**4812 440 19589**	Frame,door glas DE-WT
191 0	**4812 466 68557**	Door bellow
191 1	**4812 492 18015**	Strap Fix. Bellow
191 2	**4812 492 98011**	Strap
200 0	**4812 418 18181**	Tub
201 0	**4812 464 48002**	Bottom tub
210 0	**4812 520 18034**	Crosspiece
210 1	**4812 452 18994**	Screw M8x20 A2F
220 0	**4812 418 18246**	Drum 1600
228 0	**4812 418 18096**	Crosspiece,drum
271 0	**4812 358 18157**	Belt BK 1254 J5
272 0	**4812 528 58004**	Pulley
272 1	**4812 532 28006**	Bushing conical
272 2	**4812 532 18024**	Washer
272 3	**4819 502 18417**	Screw
292 0	**4812 530 58003**	Gasket tub bottom
301 0	**4812 452 19896**	Control panel WA-BK 50
303 0	**4812 498 18138**	Handle, drawer
321 0	**4812 452 10186**	Insert panel 1400 Dolphin
331 0	**4812 413 18219**	Knob,timer OMEGA
332 0	**4812 410 28584**	Button options OMEGA
339 0	**4812 413 18222**	Shaft OMEGA
400 0	**4812 361 58091**	Motor MCA61/64-148-1400
400 1	**4812 502 18361**	Screw M8x30
409 0	**4812 362 48004**	Brush,carbon motor CESET
421 0	**4812 121 18142**	Interf.filter 1,00 µ F
430 0	**4812 310 18458**	Pump SERVICE SET
451 0	**4812 259 28669**	Heating element
490 0	**4819 321 18136**	Cable,mains 2m
491 0	**4812 321 28367**	Strain relief
521 0	**4812 214 78296**	Control board BK1 1400
582 0	**4812 271 28394**	Pressostat OMEGA
582 1	**4812 271 18011**	Flowmeter OMEGA
620 0	**4812 276 28371**	Module BK1 C, OMEGA
630 0	**4812 280 58019**	Door lock
631 0	**4812 271 38358**	Switch MICRO
631 1	**4812 360 58112**	Floater Kit BK,WH
701 0	**4812 530 18002**	Hose, inlet VWS 3m
701 0	**4812 530 28808**	Hose, inlet VWS 1,5m
701 1	**4819 466 69704**	Gasket and filter
702 0	**4812 530 28872**	Hose flow-dispenser
702 1	**4812 530 28873**	Hose valve-flowmeter
703 0	**4812 530 48162**	Hose
707 0	**4812 526 48031**	Nozzle Distribution
707 1	**4812 526 48028**	Nozzle
707 2	**4812 530 48161**	Fitting
707 3	**4812 530 78011**	Washer edge disc
708 1	**4812 530 48141**	Bend
711 0	**4812 418 68166**	Dispenser OMEGA-3CH
712 0	**4812 418 88029**	Drawer Detergent
713 0	**4812 418 88019**	Flap Detergent Container
717 0	**4812 323 18006**	Actuator f. Distribution
717 1	**4812 321 38015**	Lever water distr. OMEGA
717 2	**4812 321 38014**	Lever OMEGA
717 3	**4812 321 38016**	Lever connection OMEGA
717 5	**4812 310 18459**	Cam actuator OMEGA
718 0	**4812 526 48027**	Siphon 3 - Chamber
718 1	**4812 418 88018**	Accessory
750 0	**4812 530 48139**	Boiler
753 1	**4812 418 68125**	Chamber,air
754 0	**4812 530 28838**	Drainhose
754 4	**4812 401 18054**	Clamp,hose
760 0	**4812 480 58085**	Filter set pump
781 0	**4819 530 28959**	Hose
782 0	**4812 530 28816**	Hose Pressostat
783 1	**4812 530 28822**	Hose
783 3	**4812 530 18001**	Connection Part
783 4	**4812 530 28818**	Hose
785 0	**4812 530 28812**	Hose Draining
785 1	**4812 462 79663**	Threaded cap OMEGA
786 3	**4812 530 28809**	Hose Aqua-Stop
787 0	**4812 530 28819**	Hose with hole
787 2	**4812 401 18401**	Strap
794 2	**4812 530 58005**	O-Ring
794 5	**4812 530 58015**	Gasket
900 0	**4812 255 18204**	Holder Hose outlet

Spare part list

Model **WA 1400 Dolphin-D**
Service No. **858329303000**
Version **858329303000**

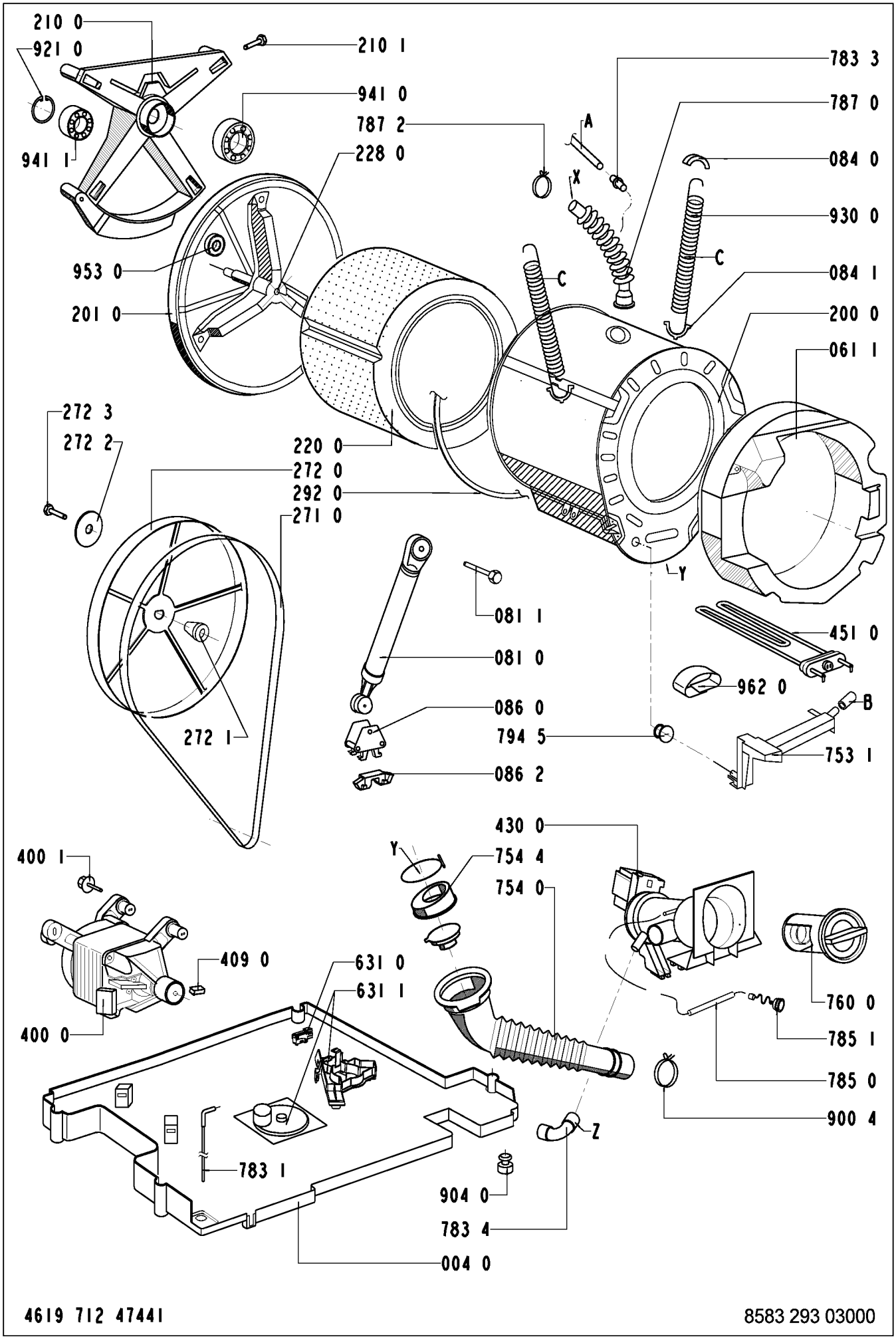
Pos. No.	12NC Code	Description
900 1	**4812 290 88043**	Bracket Door lock
900 2	**4812 290 88046**	Cable clamp
900 3	**4812 290 88048**	Cable clamp
900 4	**4812 401 18414**	Clamp,hose
900 9	**4812 401 48569**	Clamp hose pressostat
904 0	**4812 529 58002**	Rivet Base
911 7	**4812 903 08196**	Screw M 5X14-Z
921 0	**4812 011 18522**	Ring,circlip 52x2
930 0	**4812 492 38361**	Spring Suspension 1200
930 5	**4812 492 38359**	Spring , Nozzle
941 0	**4812 520 28003**	Bearing,ball 6306
941 1	**4812 520 28005**	Bearing,ball 6304
953 0	**4812 530 68001**	Shaft seal V 40 A
961 0	**4812 310 18435**	Distance sleeve BK service kit
962 0	**4812 466 38011**	Cover,protect. heating element
965 0	**4812 466 68545**	Cover BK/WH
965 1	**4812 440 18992**	Lid Rearcover
993 0	**4819 530 29028**	Bow
993 3	**4812 395 58004**	Tool

Exploded view

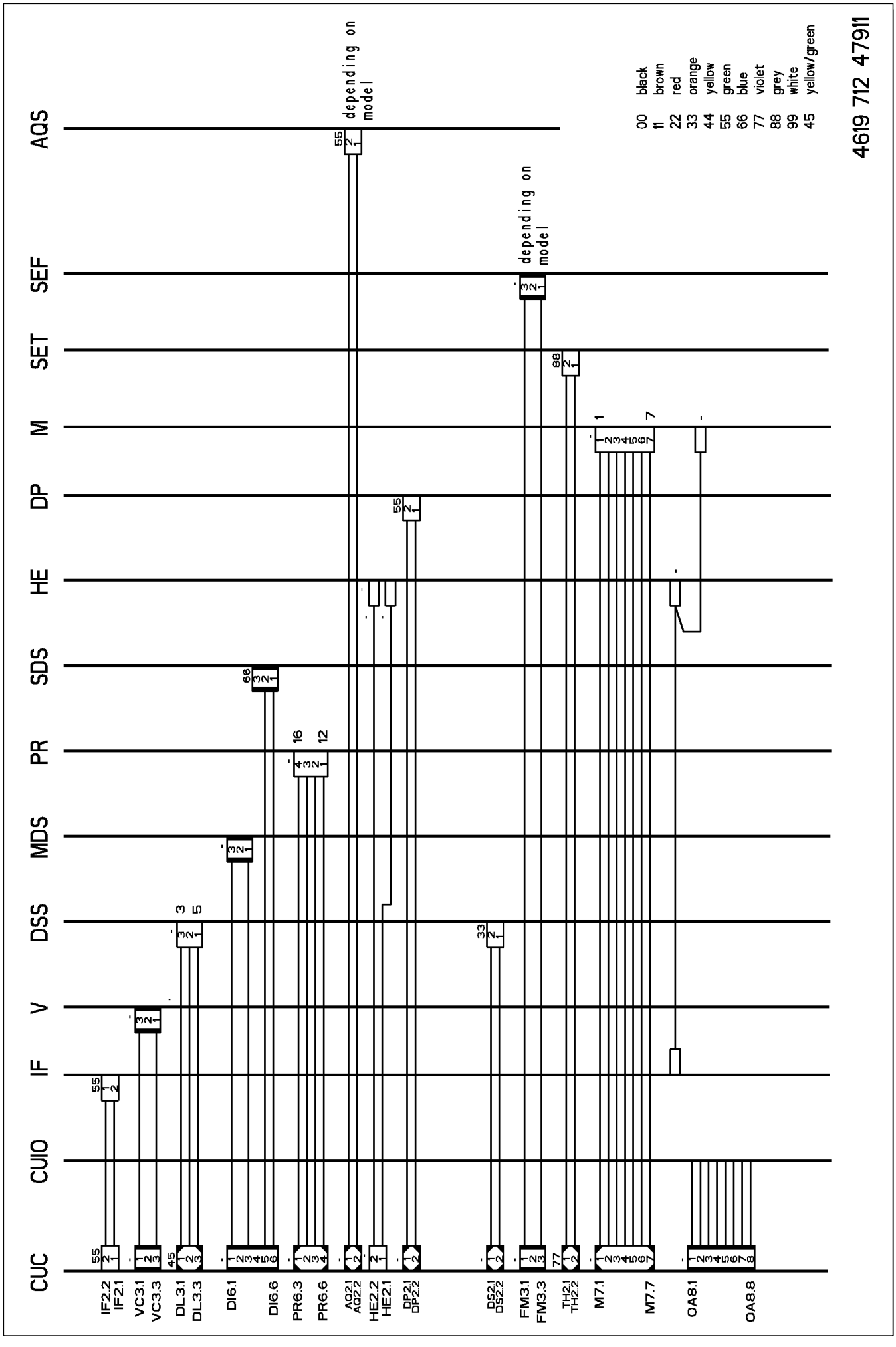


4619 712 47441 8583 293 03000

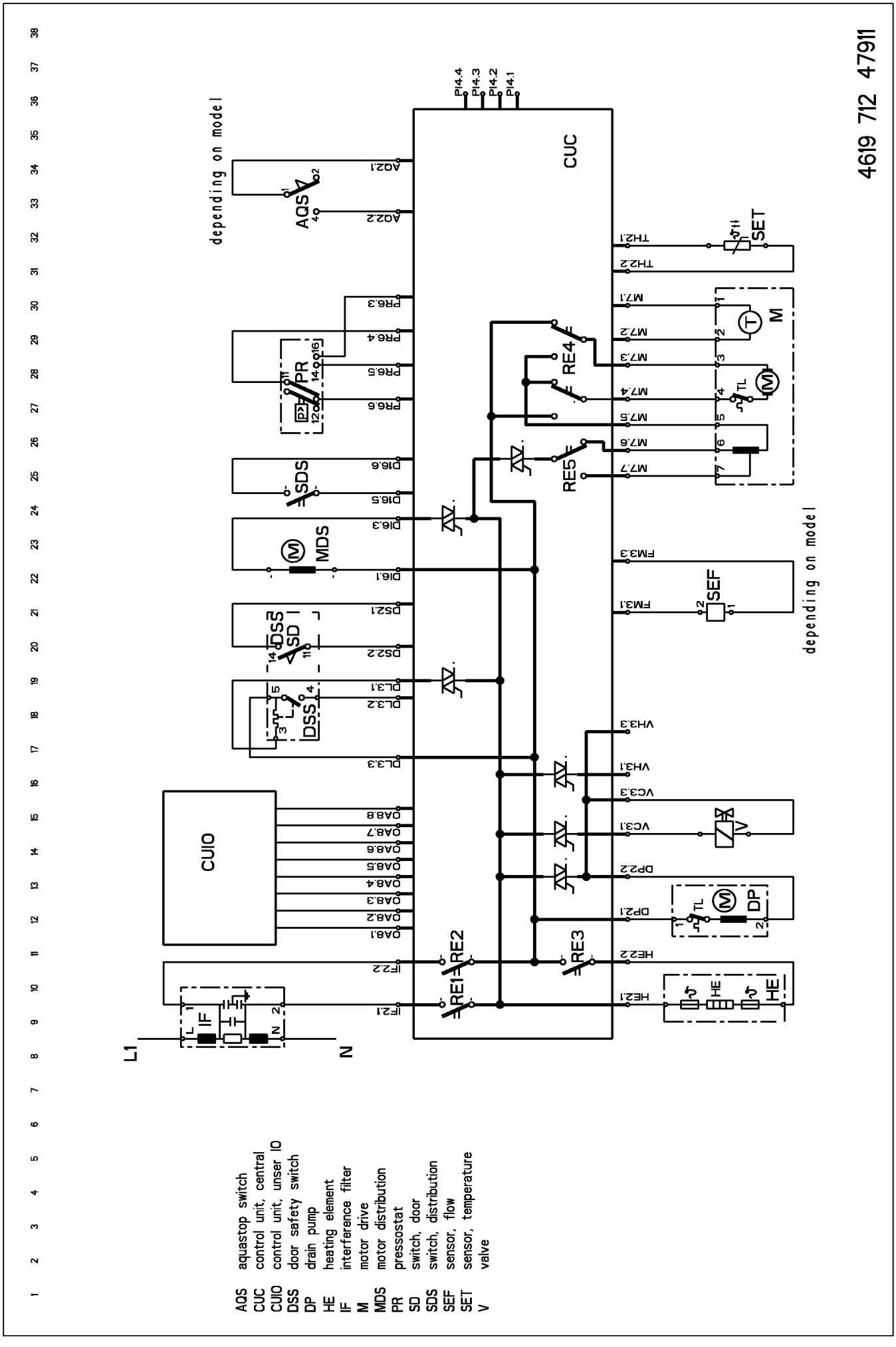
Exploded view



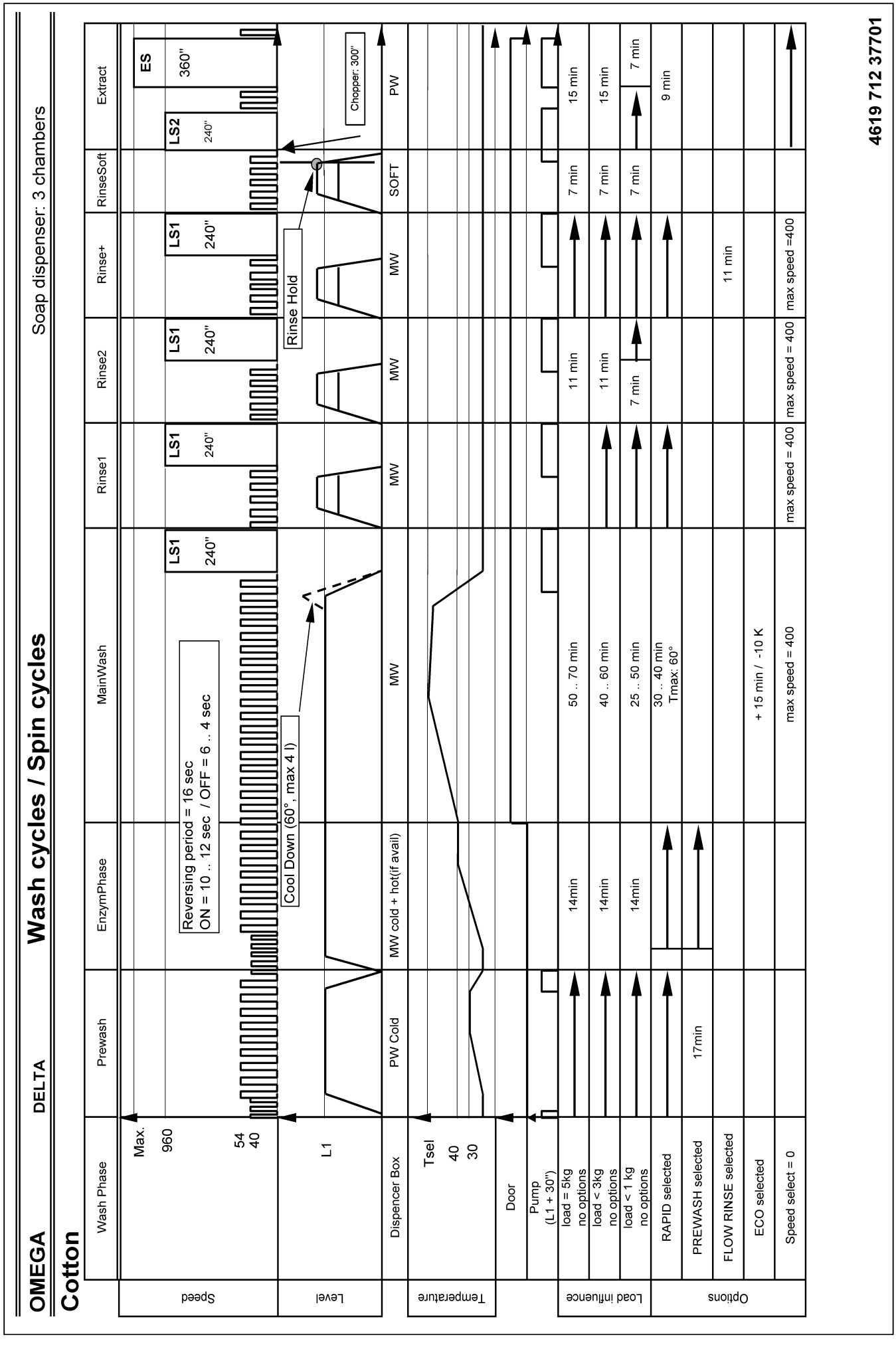
Wiring diagram



Circuit diagram



Program chart



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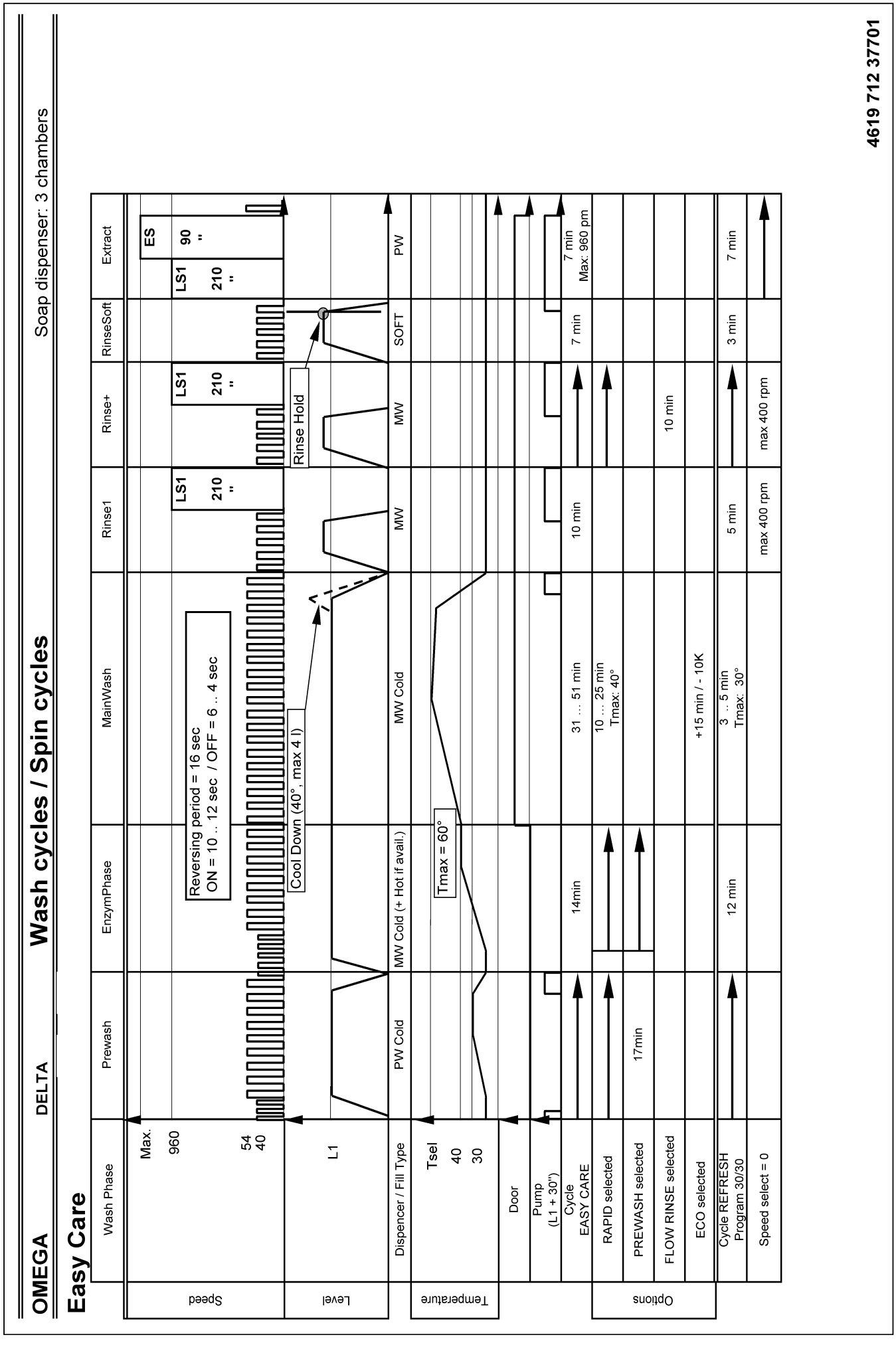
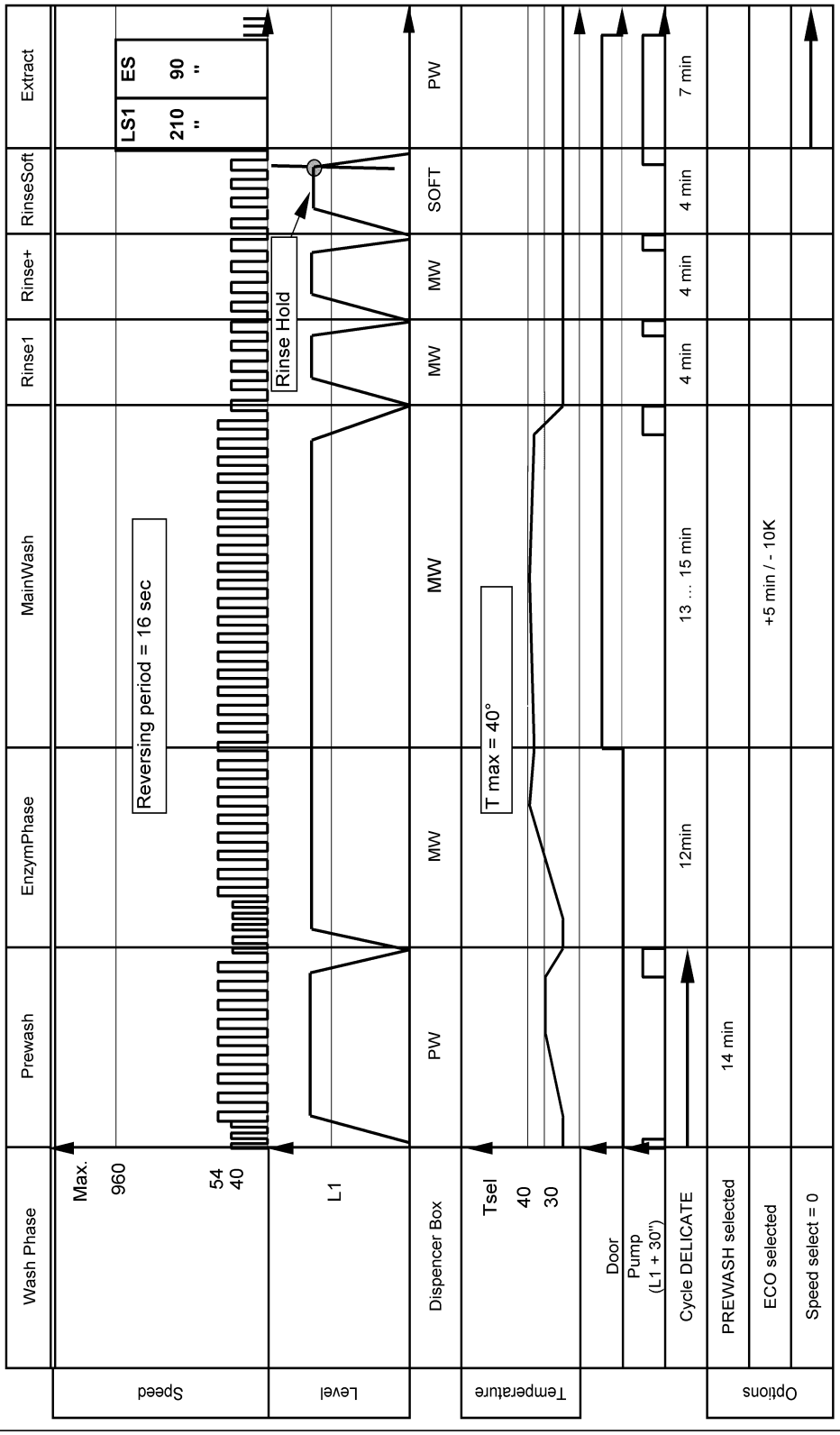
Program chart



Program chart

OMEGA DELTA **Wash cycles / Spin cycles** Soap dispenser: 3 chambers

Delicate



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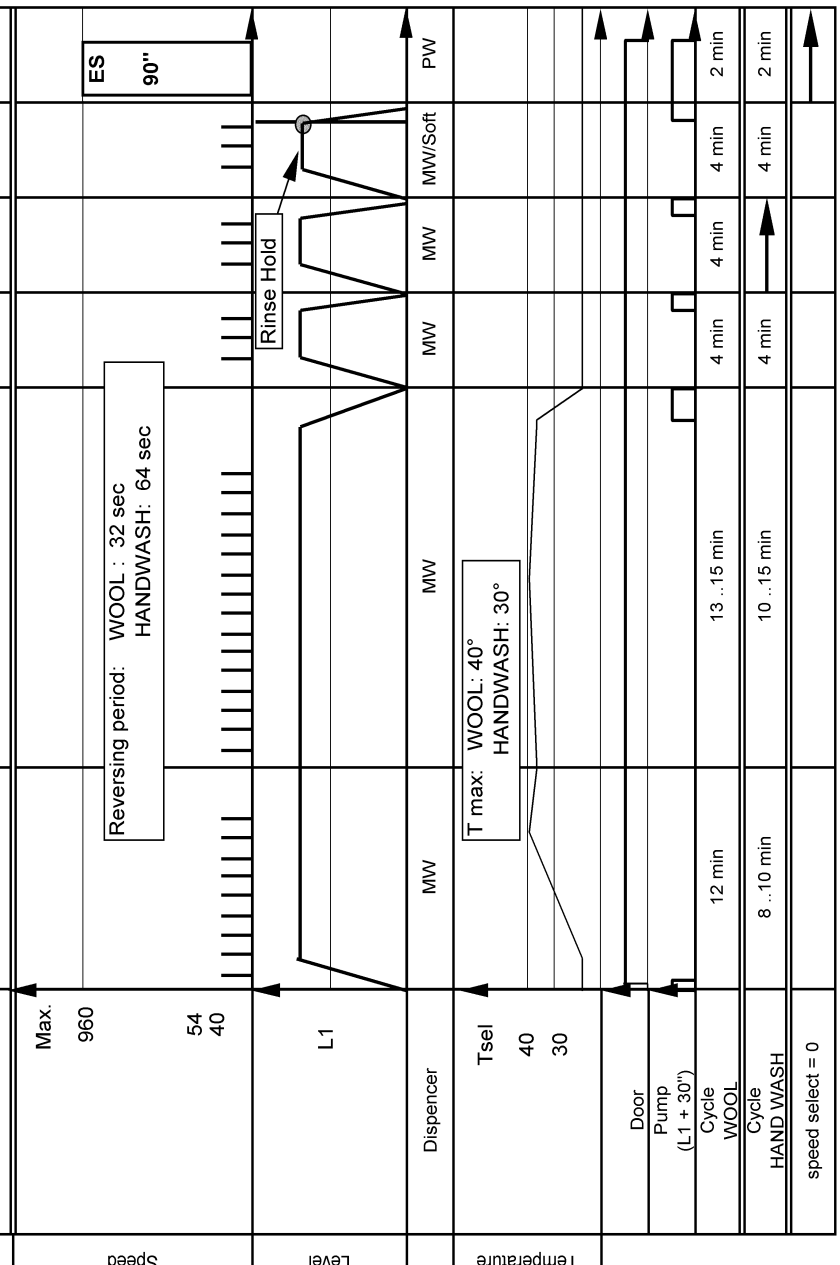
Program chart

OMEGA DELTA **Wash cycles / Spin cycles** Soap dispenser: 3 chambers

Wool



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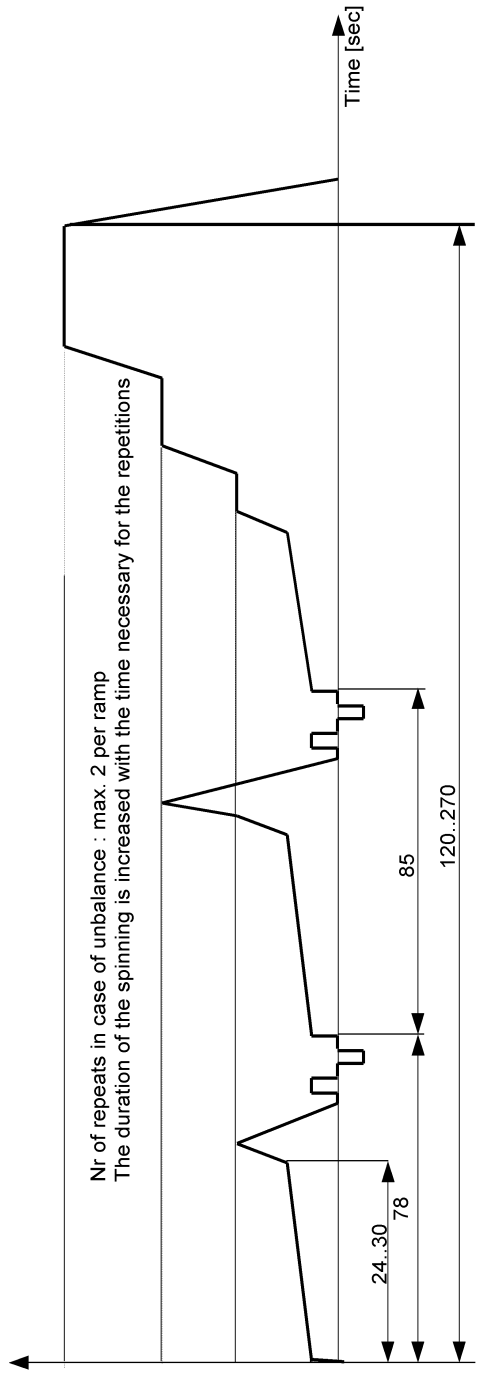
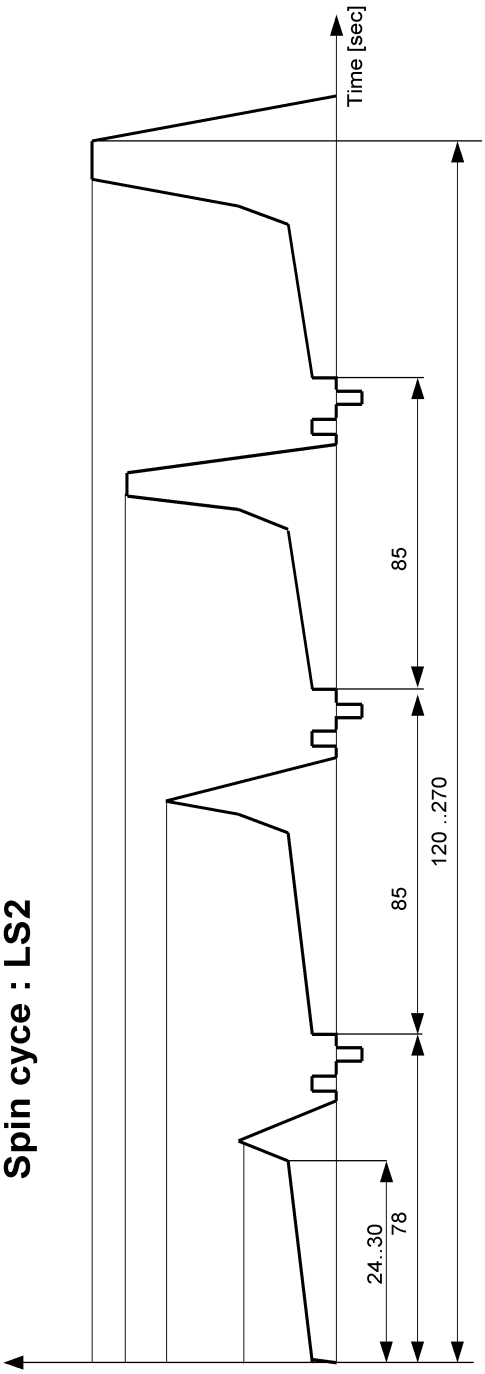
Program chart

OMEGA DELTA **Wash cycles / Spin cycles** Soap dispenser: 3 chambers

Spin cyce : LS1



Spin cyce : LS2



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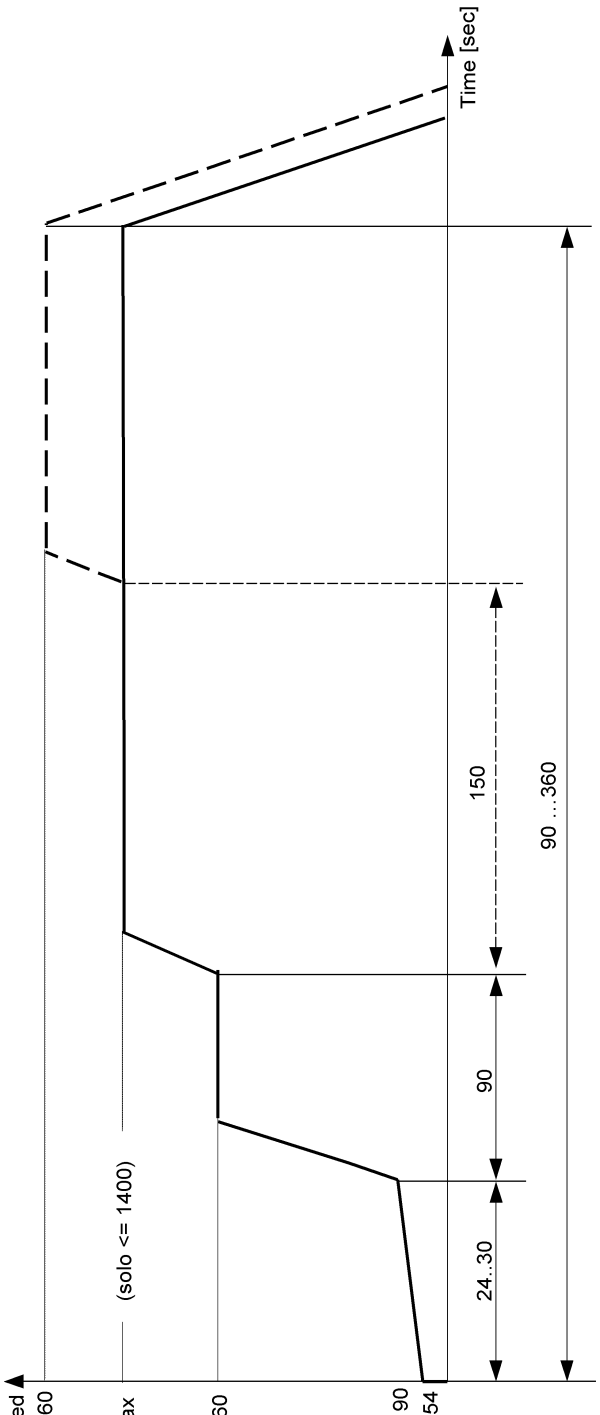
Program chart

OMEGA DELTA **Wash cycles / Spin cycles** Soap dispenser: 3 chambers

Spin cyce : ES



Nr of repeats in case of unbalance : max. 10
Nr of repeats in case of foam: max. 3
In the cycles WOOL and HANDWASH we do not have repeats.
The duration of the spinning is increased with the time necessary for the repetitions

4619 712 37701

Text/Legend

OMEGA **DELTA** **Test Flow** Soap dispenser: 3 chambers

1	Select program	Drain	
2	Start Test Program	Push Prewash option 4 times during 5 seconds Indication Cx	
3	Indication elements BK	DIGITS Rest Time	Indicate current program step
		DIGITS Temperature	Indicate current program step
		LED Water Tap	BLINK
		LED Start	ON
		LED Program Flow	BLINK
4	Go to next step	Push prewash option 2 times	
5	Finish test program	Move the program selector from the DRAIN position	

Attention: Use the test program only without laundry!

Temperature Indication	Rest Time Indication	Function	Duration	Checked	Drum rhythm
C0	C0	Lock the door	Until the door locked	Door lock function Drum Up Switch	
C1	C1	Fill, current dispencer position	until level 1 is reached		
C2	C2	Move dispencer motor to Prewash		Dispencer	
C3	C3	Fill (cold + hot)	L1 + 30"		
C4	C4	Movement	60"	Motor	Drum CW 54 rpm
C5	C5	Wash + Heat	max 50° + 1 min	Heater	Drum CW 54 rpm
C6	C6	Drain	L1		Drum CW 54 rpm
C7	C7	Ramp	30"	Motor	Drum CCW Ramp 54-90 rpm
C8	C8	Spin (max speed)	60"	Motor	Drum CCW Max speed

If failure occurs
The test program is stopped
Buzzer will beep 30 "
Speed LEDs are flashing
Failure indication on RestTime digits and/or temperature digits see next page

Text/Legend

OMEGA DELTA **Test Flow** Soap dispenser: 3 chambers

DIGITS Temperature	DIGITS Rest Time	Detected failure	To be checked
FH	FH	No water inlet	Water Tap / Valve / Flowmeter / Pressostat
FA	FA	Aquastop failure	Aquastop switch
FP	FP	Drain failure	Drain pump / Pressostat
F4	F4	Temperature failure (no temperature increase)	Heater , NTC
F5	F5	NTC failure (SC / OC)	NTC
F6	F6	Tachometer failure (no motor movement datected)	Motor; Tachometer
F7	F7	Triac short circuit detection	Control unit, Motor
F8	F8	Heater failure (no feedback on Heater safety)	Heater , Control Unit
F9	F9	Overflow failure	Pressostat
F10	F10	Temperature sensor defect (only for chopper)	Control unit, Motor
F11	F11	Communication failure, chopper module	Control unit, chopper module
F12	F12	Heater safety failure	Heater, Control unit
F13	F13	Water distributor failure	Distributor
F14	F14	EEPROM failure	Control unit
F21	F21	Communication failure user-, control board	Control unit, user board
F31	F31	Communication failure control board, internet	Control unit, internet

In the failure state all actuators are switched OFF. The mains relays are opened.
Exception: During Aquastop/ overflow failure the Drain Pump is switched ON.

The ERROR state is cancelled if the program selector is set to OFF position.

Text/Legend

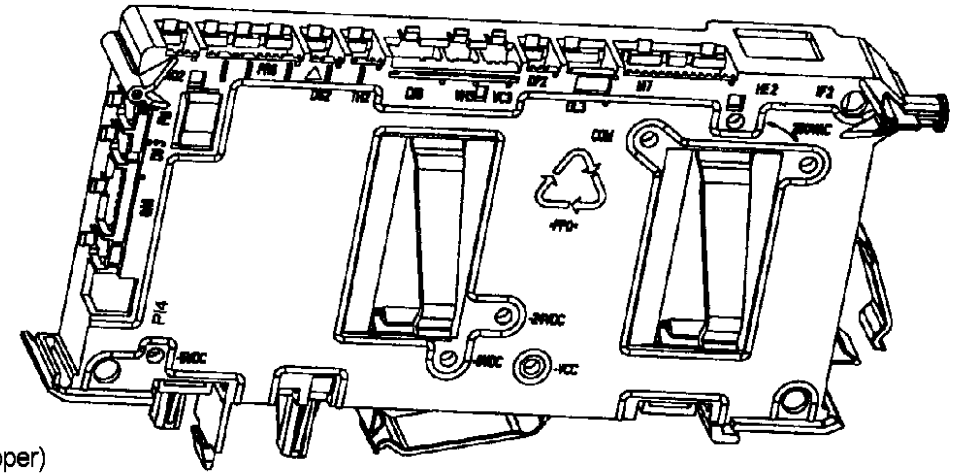
OMEGA DELTA **General Data Service** Soap dispenser: 3 chambers

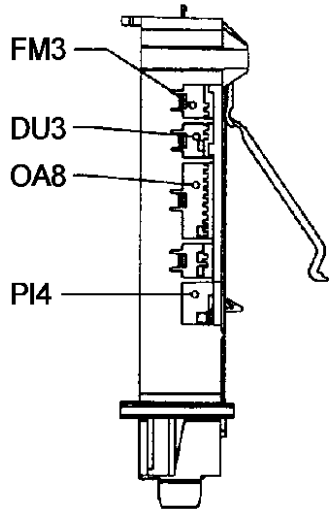
Failure detection:

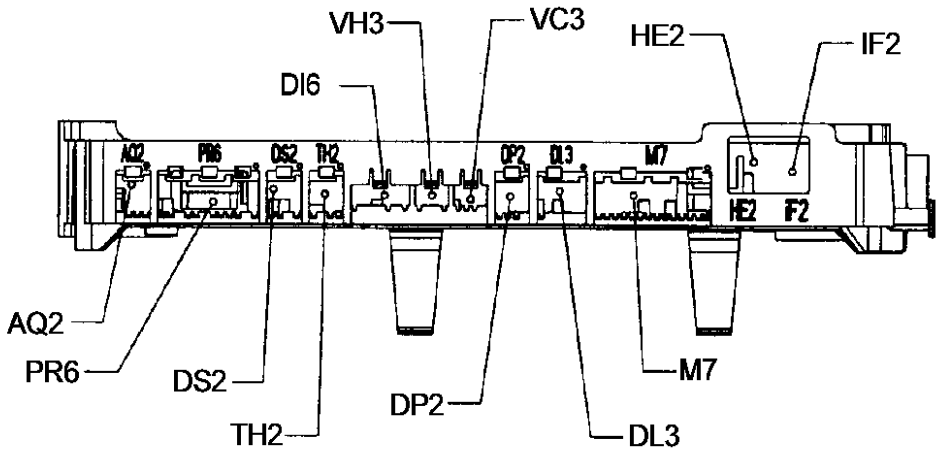
Detected in step	Description	Detection time	Indication
FILLING	no flowmeter pulses detected at the beginning of the step	15"	FH
FILLING	IF theLevel1 is not switched ON after a certain time	8 min	FH
ALL	If the Aquastop switch = ON: {Drain Pump = ON; Wait 60"} If Aquastop switch = ON {Drain Pump = ON ; Failure Mode}	60"	FA
ALL	If the Overflow contact = ON: {Drain Pump = ON; Wait 60"} If the Overflowcontact = ON {Drain Pump = ON ; Failure Mode}	60"	F9
DRAINING	If the level 1 is not switched OFF after 8 min of draining.	8 min	FP
HEATING	No water temperature increase during 10 min	10 min	F4
HEATING	NTC value = 0 // NTC values > 36 kOhm	10"	F5
HEATING	Heating element interrupted (not connected)	10"	F8
ALL (except HEATING)	Heating relay sticked closed Heater sc to ground	10"	F12
ALL	No tacho signal. Failure is declared after 2 trials (Chopper only 1 trial)	2"	F6
ALL	Triac short circuit detected. Failure is declared after 2 trials (Chopper only 1 trial)	2"	F7
FILLING	No(Wrong) feedback from the dispencer contact during movement of the Dispencer.	5min	F13
ALL	Wrong data read from internal EEPROM	30"	F14
ALL	No communication between Main microcontroller and motor microcontroller	3min	F11
SPINNING	IF the contact FOAM = ON then Stop spinning; Drain until the LevelFoam contact = OFF. Reset timing. Restart current peak . Max. 3 repeats		
SPINNING	IF the contact DoorLock = OFF (door not locked) then no spinning performed		
HEATING	IF the contact DoorLock = OFF(door not locked) then Max temperature = 40°		
All	Temperature sensor defective on motor control unit (only Chopper)	2"	F10
All	communication interruption between user board and control board	max 5"	F21
All	communication interruption between control board and internet	max 5"	F31

Timer OMEGA Delta (fully electronic) 230V, 50Hz

AQ2	aquastop switch
OA8	control unit, unser IO
DS2	door switch (safety)
DP2	drain pump
DU3	drum up
HE2	heating element
IF2	interference filter
M7	7 pol. motor
	6 pol. control unit motor (only chopper)
DI6	switch / motor distribution
PR6	pressostat
DL3	door switch (lock)
FM3	sensor, flow
TH2	sensor, temperature
VC3	valve, cold fill
VH3	valve, hot fill
PI4	program, input







Test points for Omega 2

no longer available!

OMEGA